

1-17. (CANCELED)

18. (CURRENTLY AMENDED) A method for monitoring and diagnosing errors of drive train components of a motor vehicle by monitoring a transmission route of a drive train control signal, comprising the steps of:

reading an actual value of a monitored output signal at an output of the transmission route of the drive train control signal,

determining by a calculation algorithm a nominal output value corresponding to the monitored output signal resulting from a check variable inserted into the transmission route before the output of the transmission route wherein the calculation algorithm is selected such that calculated nominal output value represents a corresponding value of the monitored output signal for the current value of the check variable when there are no errors in the drive train components, and

performing a plausibility check of the monitored output signal by determining whether the actual output value is within an acceptable value of the nominal output value for the current value of the check variable.

~~which are one or more of controlled and regulated by means of signals generated by a calculation algorithm, especially for a transmission control, with at least one of transmission routes of critical signals and output variables are being monitored.~~

19-21. (CANCELED)

22. (CURRENTLY AMENDED) The method for monitoring and diagnosing errors of drive train components of a motor vehicle by monitoring a transmission route of a drive train control signal according to claim 18, further comprising the steps of:

modulating the current value of the check variable by a selected amount,

determining a new actual value of the monitored output signal by re-reading the actual output value of the monitored output signal,

determining a new nominal output value from the modulated value of the check variable, and

performing a new plausibility check with the new nominal output value by determining whether the new actual output value for the current value of the modulated check variable is within an acceptable value of the new nominal output value for the modulated value of the check variable

~~wherein on one nominal output value, calculated by the calculation algorithm, a check variable is modulated and subsequently the re-read, modulated actual value is compared at an output position with a modulated nominal value.~~

23. (CURRENTLY AMENDED) The method for monitoring and diagnosing errors of drive train components of a motor vehicle by monitoring a transmission route of a drive train control signal according to claim 22, wherein

the value of the check variable is modulated by an amount selected to have an effect on a control function of the monitored output signal that is less than a predetermined limit ~~the modulated variable has one of no, or very slight, effect upon the output variable proper.~~

24. (CURRENTLY AMENDED) The method for monitoring and diagnosing errors of drive train components of a motor vehicle by monitoring a transmission route of a drive train control signal according to claim 22, wherein the plausibility check includes determining whether successive differences between successive calculated output values for successive modulated values of the check variable for evaluating the re-read actual value, whether the difference of the successive check values exceed[[s]] a specific preset amount is checked.

25-27. (CANCELED)

28. (CURRENTLY AMENDED) The method for monitoring and diagnosing errors of drive train components of a motor vehicle by monitoring a transmission route of a drive train control signal according to claim [[27]]35, wherein the checking software process uses the same calculation algorithm and the same [[data]] values of the check variable on which are based [[the]] control and regulation of the components of the drive train.

29-31. (CANCELED)

32. (CURRENTLY AMENDED) The method for monitoring and diagnosing errors of drive train components of a motor vehicle by monitoring a transmission route of a drive train control signal according to claim 18, wherein further comprising the steps of:

at least a first monitored output signal is undergoing a plausibility check, and

at least a first monitored output signal undergoes a plausibility check only during specified conditions and the specified conditions are not present,

generating a check indicator in the calculation algorithm ~~and when during a plausibility check of at least a first monitored output signal for a case of signal variables that are calculated only in certain situations, the calculation algorithm sets on a checking software,~~ a check indicator to signal to the checking process a momentary non-calculation of [[an]] a corresponding nominal output value,

~~said output value being re-reading the check indicator in the checking software process as the non-calculated corresponding nominal output value,~~ and

~~directly compared~~ comparing the check indicator with a fixed output variable
value ~~such as zero and the output value not being calculated by the calculation~~
~~algorithm.~~

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33-34. (CANCELED)

35. (NEW) The method for monitoring and diagnosing errors of drive train components of a motor vehicle according to claim 22, wherein:

each nominal output value corresponding to a value of a modulated check variable is determined by a checking process operating in parallel with the calculation algorithm.

36. (NEW) The method for monitoring and diagnosing errors of drive train components of a motor vehicle according to claim 22, wherein:

each nominal output value corresponding to a value of a check variable is precalculated and stored in a memory to be read during each plausibility check..

37. (NEW) The method for monitoring and diagnosing errors of drive train components of a motor vehicle according to claim 36, wherein:

the nominal output values are stored in compressed form.